Agricultural Extension Service
The University of Tennessee
SP291G

Vegetables

Fall Vegetable Gardens

David W. Sams, Professor
Plant and Soil Science

Spring-grown, cool-season vegetables are frequently finished by early summer. Some warm-season vegetables also cease production before fall. The absence of fall-garden vegetable production from these crops and the open garden space when they are finished both present an opportunity for a fall garden.

Fall gardens, however, are considerably more difficult to grow than spring gardens. Problems include extreme heat, drought, difficulty in seed germination, insects, diseases and weeds. Successful fall gardens require close attention and considerable care from planting to harvest. The following tips should prove helpful:

Select varieties carefully. The best spring varieties are not always the best fall varieties. Spring varieties germinate in cool, moist conditions and mature as the days grow drier, warmer and longer. Fall varieties have just the opposite growing conditions: long, dry days at first and short, cool, moist days as they mature. Table 1 suggests suitable varieties for fall production.

Plant at the proper time. Green beans, tomatoes and other warm-season vegetables must mature before they are killed by frost. Kale, collards and cool-season vegetables will withstand considerable frost and their harvest may sometimes continue several weeks after the first frost. Determine the last possible planting date for all fall vegetables as follows:

Begin with average date of the first frost in your area. Table 2 lists the average date of the first 32F fall temperature for many Tennessee communities. Warm-season vegetables should begin to mature at least two weeks ahead of this date, while vegetables able to withstand frost can mature at least two weeks after the date of the first expected frost.

Most seed packets and variety descriptions in catalogs estimate the days from planting to maturity. Add about 10 days to this estimate because of the cooler, shorter days in the fall. Subtract the total number of days required for the vegetable to grow from the date you want it to begin maturing to find the latest planting date.

For example, assume the average first frost in your area is Oct 15. When is the last date to plant summer squash? Summer squash will be killed by frost, so subtract two weeks from Oct. 15, giving Oct. 1. If the seed packet says 50 days are required to mature, add 10 days, for a total of 60 days. Subtracting 60 days from Oct. 1 gives Aug. 1 as the latest date to plant this variety of summer squash in your area. In another example, turnip greens will withstand frost. Two weeks after Oct. 15 is Oct. 30. If the packet says 40 days to the first harvest, adding 10 days gives 50 days to first harvest in the fall. Fifty days before Oct. 30 is Sept. 10, the last day to plant those turnip greens in your area. Table 1 also recommends planting dates and estimates days to first harvest for many vegetables that can be grown in the fall.

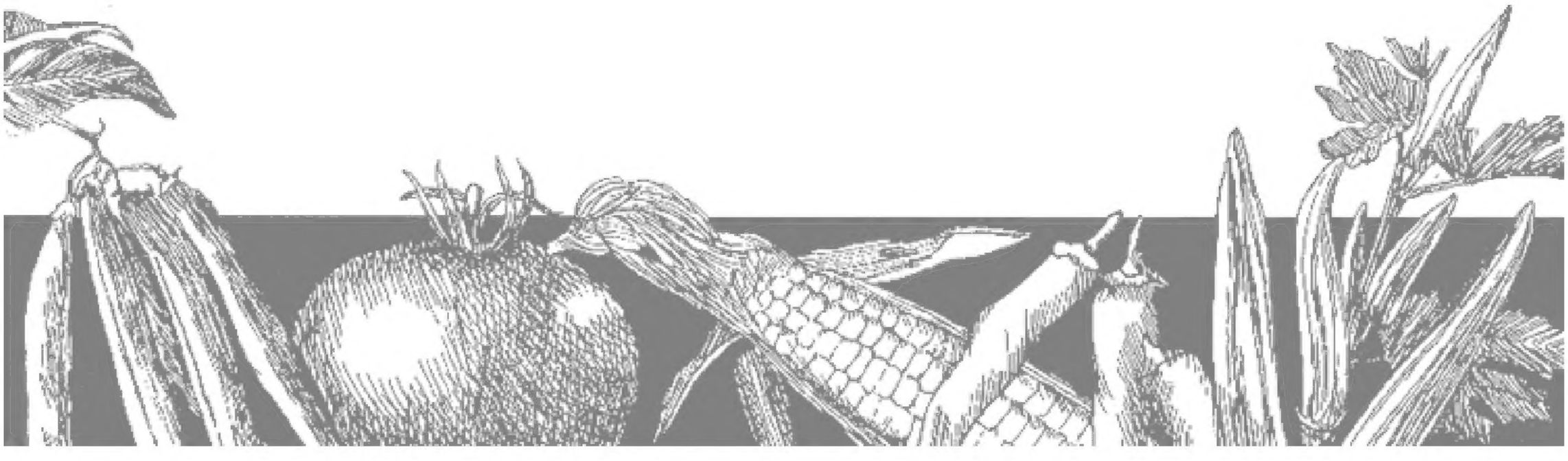

Table 1: Guide to Fall Garden Vegetables

Vegetable	Variety	Planting Interval	Seed or plants per 100- foot row	Inches between rows	Inches between plants	Days to first harvest	Length of harvest season	Yield range per 100- foot row
Beans, Bush Snap	Provider, Blue Lake, Top Crop, Derby, Roma II, Half runners	July 15 to Aug. 15	1/4 pound	24 to 36	3 to 4	52 to 60	2 weeks or more	80 to 120 pounds
Broccoli	Emperor, Green Comet, Premium Crop, Packman	July 15 to Aug. 15	66 plants	24 to 36	18	60 to 70	4 weeks	50 to 100 pounds
Cabbage	Round green types, Red Rookie, Gourmet, Stonehead, Savoy King	July 5 to Aug 15	66 plants	24 to 36	18	60 to 75	3 weeks	125 to 200 pounds
Cabbage, Chinese	Dynasty, Michihli, Two Seasons	July 1 to July 30	100 plants	24 to 36	12	40 to 50	4 weeks	200 to 300 pounds
Cauliflower	Snow Crown	July 15 to Aug. 15	66 plants	24 to 36	18	55 to 65	2 weeks	50 to 100 pounds
Collards	Blue Max, Georgia, Vates	July 1 to Sept.1	1/4 ounce seed	18 to 36	18	65 to 75	4 to 30 weeks	100 to 150 pounds
Cucumber, Pickling	Country Fair, Pickalot, Saladin, Carolina	July 1 to Aug. 1	1/4 ounce seed	72	12	50 to 55	3 to 6 weeks	115 to 250 pounds
Cucumber, Slicing	Sweet Slice, Burpless, Sweet Success, Marketmore	July 1 to Aug. 1	1/4 ounce seed	72	12	50 to 65	3 to 6 weeks	115 to 250 pounds
Kale	Vates, Dwarf Blue, Curled Vates	July 1 to Sept. 1	1/4 ounce seed	18 to 36	12 to 15	55 to 65	4 to 20 weeks	100 to 150 pounds
Kohlrabi	Grand Duke	July 15 to Sept 1	1/4 ounce seed	14 to 36	3 to 6	40 to 50	4 weeks	50 to 75 pounds
Lettuce, Leaf	Salad Bowl, Oakleaf, Black Seeded Simpson, Red Sails	July 1 to Sept. 15	1/2 ounce seed	14 to 36	6	40 to 50	4 to 6 weeks	50 to 75 pounds
Mustard	Savannah, Tendergreen, Southern Curled	July 1 to Sept. 1	1/4 ounce seed	14 to 36	5 to 10	35 to 45	3 to 6 weeks	75 to 100 pounds
Potatoes, Irish	Cobbler, Kennebec, Yukon Gold, Red Pontiac	July 1 to July 31	14 pounds of seeds	30 to 36	12	90 to 110	4 months stores	100 to 120 pounds
Radish	White Icicle, Cherry Bell, Champion	Aug. 1 to Sept. 15	1/2 ounce seed	14 to 36	1 to 2	25 to 30	3 weeks	50 bunches
Spinach	Longstanding, Bloomsdale, Tyee, Melody	Sept. 10 to Sept. 20	1 ounce seed	14 to 36	3 to 4	40 to 50	3 weeks	10 to 30 pounds

Table 1: Guide to Fall Garden Vegetables (cont.)

Vegetable	Variety	Planting Interval	Seed or plants per 100- foot row	Inches between rows	Inches between plants	Days to first harvest	Length of harvest season	Yield range per 100- foot row
Squash, Summer	Dixie, Butter Bar, Early Summer Crookneck, Zucchini types	July 15 to Aug. 15	1 ounce seed	48 to 60	12 to 24	40 to 50	6 weeks	100 to 150 pounds
Tomatoes	Betterboy, Celebrity, Long Keeper, Sweet Million, (cherry) Lemon Boy, Pink Girl,	July 1 to Aug. 1	50 plants	48	24	70 to 80	8 weeks or more	200 to 300 pounds
Turnip Greens	Seven Top, All Top	Aug. 1 to Sept. 30	1/2 ounce seed	18 to 36	2 to 4	30 to 40	Several weeks	50 to 100 lbs.
Turnip Roots	Purple Top, White Globe, Tokyo Hybrid, Just Right, White lady	Aug. 1 to Sept. 15	1/4 ounce seed	18 to 36	3	40 to 65	6 months	100 to 150 lbs.

Maintain moisture during germination. Vegetable seed will not germinate without moisture. High fall temperatures and sparse rainfall contribute to difficult conditions for seed germination. Water soils amply before planting fall vegetables. Plant seed 1/4 inch deeper than you would plant spring vegetables. Watering before the seed is planted will increase available moisture and reduce crusting. Deeper planting will reduce chances of the seed drying out. Various systems to shade the soil surface until the seedlings come up will also maintain moisture and increase plant emergence.

Care for fall gardens properly. Fall gardens require more attention than spring gardens. Insects, diseases, weeds and drought problems are all more severe in the fall. Plants are also more difficult to establish in the fall. Walk through gardens frequently and observe them. Remove weeds while they are small. Control insects and diseases before these problems become severe. Specific suggestions can be obtained from Extension PB595, "You Can Control Garden Insects," and PB1215, "Disease Control in the Home Vegetable Garden." Apply 1 to 1 1/2 inches of water weekly when it does not rain. Start plants in a small nursery area and transplant them into the garden after they are large enough to withstand more severe conditions.

Use fertilizer. Fertilizer applied to gardens in the spring may not be available for use by fall vegetables. This is especially true of nitrogen, which tends to leach quickly from garden soils. Apply nitrogen to fall vegetables as you would to spring vegetables. More detailed information on fertilizing vegetable gardens is available in UT Extension PB901, "Growing Vegetables in Home Gardens." All Extension publications are available free of charge to Tennessee residents at county Extension offices.

Table 2: Average Date of First 32F Temperature for Tennessee Communities

Community	Date	Community	Date
Allardt	Sept. 19	Loudon	Oct. 22
Ashwood	Oct. 20	Lynnville	Oct. 12
Bolivar	Oct. 11	Martin	Oct.15
Brownsville	Oct. 8	Memphis	Nov. 6
Carthage	Oct. 22	Milan	Oct. 17
Chattanooga	Oct. 30	Monteagle	Oct. 28
Clarksville	Oct. 2	Murfreesboro	Oct. 13
Copper Hill	Oct. 14	Nashville	Oct. 29
Covington	Oct. 26	Newbern	Oct. 13
Crossville	Oct. 8	Newport	Oct. 20
Dale Hollow Dam	Oct. 16	Oak Ridge	Oct. 31
Dickson	Oct. 24	Palmetto	Oct. 5
Dover	Oct. 14	Paris	Oct. 25
Gatlinburg	Sept. 11	Rogersville	Oct. 14
Jackson	Oct. 24	Samburg	Oct. 15
Kingsport	Sept. 27	Savannah	Oct. 20
Knoxville	Oct. 31	Springfield	Oct. 11
Lewisburg	Oct. 4	Tullahoma	Oct. 20
		Waynesboro	Oct. 11

Precautionary Statement

To protect people and the environment, pesticides should be used safely. This is everyone's responsibility, especially the user. Read and follow label directions carefully before you buy, mix, apply, store, or dispose of a pesticide. According to laws regulating pesticides, they must be used only as directed by the label. Persons who do not obey the law will be subject to penalties.

Disclaimer Statement

Pesticides recommended in this publication were registered for the prescribed uses when printed. Pesticides registrations are continuously reviewed. Should registration of a recommended pesticide be canceled, it would no longer be recommended by the University of Tennessee. Use of trade or brand names in this publication is for clarity and information; it does not imply approval of the product to the exclusion of others which may be of similar, suitable composition, nor does it guarantee or warrant the standard of the product.

SP291G-10M-3/99(Rev) E12-2015-00-046-99

The Agricultural Extension Service offers its programs to all eligible persons regardless of race, color, national origin, sex, age, disability or veteran status and is an Equal Opportunity Employer.
COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS
The University of Tennessee Institute of Agriculture, U.S. Department of Agriculture,
and county governments cooperating in furtherance of Acts of May 8 and June 30, 1914.
Agricultural Extension Service
Billy G. Hicks, Dean